



Era Aviation, Inc.

# Era Aviation Services

## PROCUREMENT SPECIFICATION

PROCUREMENT SPECIFICATION NO. 4020

HOSE ASSEMBLY - MEDIUM PRESSURE  
FUEL AND OIL, ELASTOMER (SYNTHETIC RUBBER)

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ERA P S 4020 REV E DATE 07/09/98LOG OF REVISIONS

REVISION	DATE	PAGES AFFECTED	REVISION DESCRIPTION	APPROVED DATE
IR	07/30/93	ALL	Initial Release	J. Marcell 07/30/93
A	11/19/93	B and 3	Change requires more hose sizes to be made of steel.	J. Marcell 11/19/93
B	5/29/95	ALL	Removed Teflon hose spec. Added flareless fittings and silicone sleeve firesleeveng. Revised spec. to allow mfg. of hose assembly at Era.	J. Marcell 5/29/95
C	11/1/95	B, 3, 4, 5, & 6	Revised Note 10 to provide info. on sealing the ends of the firesleeve. Revised approved vendor info. and removed 6 sizes from Table I.	J. Marcell 1/29/96
D	06/07/97	B, 3 & 4	Add limited approval of -16 fitting.	J. Marcell 06/07/97
E	07/09/98	B, 3 & 4	Add -6 size approval and -10 size limited approval.	J. Marcell 07/09/98

ERA P S 4020 REV F DATE 06/09/00**LOG OF REVISIONS**

REVISION	DATE	PAGES AFFECTED	REVISION DESCRIPTION	APPROVED DATE
F	06/09/00	C, D, 1 thru 7.	Revised notes 1, 2, 5, 7, and 10. Removed note 12. Added references to PS4021 spec. Added operating pres. to Table I. Renumbered note 13 to note 7. Added Page D.	<i>D. Marshall</i> 06/09/00

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## 1 INTRODUCTION

### 1.1 Purpose

This process specification provides information for creating an Era Aviation part number for a flexible hose assembly which can be called out on the next assembly "using" drawing.

### 1.2 Hose Assembly Application

The hose assembly defined by this specification is a crash resistant flexible synthetic rubber type hose reinforced with stainless steel wire braid and reusable end fittings. The hose assemblies are suitable for use in aircraft medium pressure fuel and engine oil systems. See Section 3, note 2 for applicable limitations.

## 2 HOSE ASSEMBLY PART NUMBERS

A hose assembly part number can be created or deciphered by examination of the "part no. code" and "example of hose assembly part no." sections shown in Sections 2.1 and 2.2, respectively. Use "Table I" and "Table II" in Sections 2.3 and 2.4, respectively, to code the hose size and end fitting style in the part number. The end fitting style refers to whether the fitting is straight, 45° angle, 90° angle 37° flared nut, or flanged and the fitting material (stainless steel or aluminum).

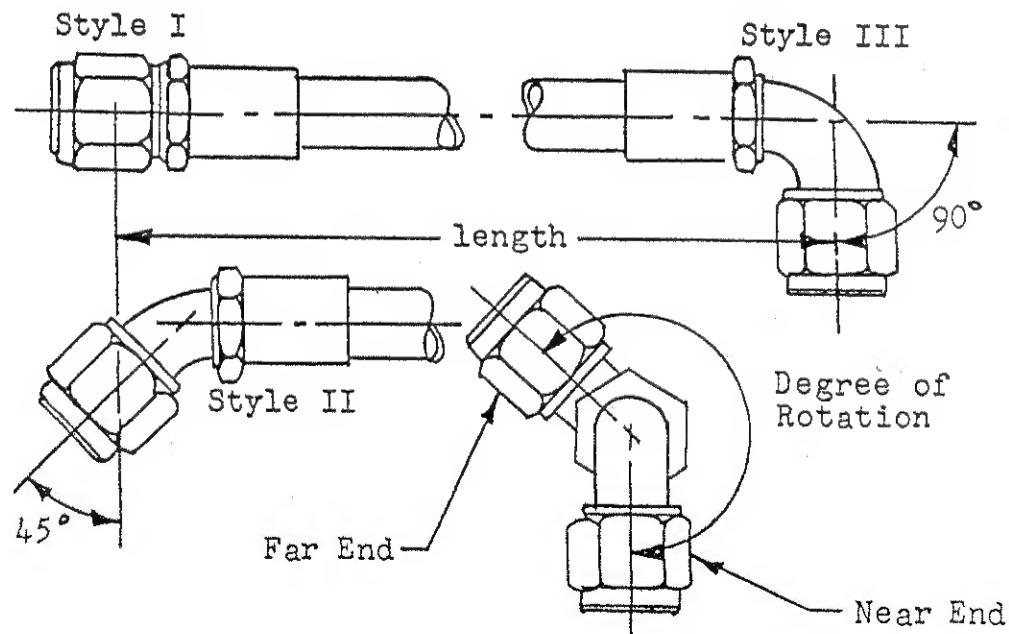
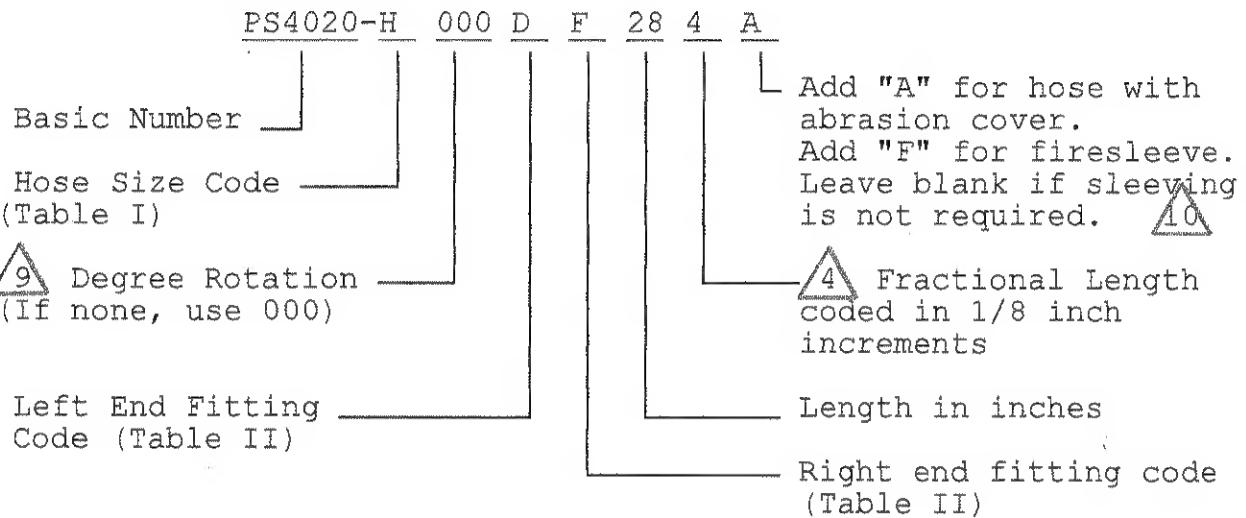
The notes in Section 3 provide specific information used in the specification of the hose assemblies.

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## 2.1 Part No. Code:



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2.2 Example Of Hose Assembly Part No:

PS4020-H000AC284A - Hose Assembly, .50 Inch Diameter Nominal Hose Size, 0° Rotation, Straight Steel Flared Fitting on the Left End of the Hose, 90° Steel Flared Fitting on the Right End of the Hose, 28 1/2 Inches Long with Hose Abrasion Cover

2.3 Hose Size Code

Use Table I to specify the code letter for the desired nominal hose size (inside diameter). Dash numbers shown are equivalent tubing outside diameter in 1/16" increments. The normal maximum operating pressure is also shown.

Hose Size	-6	-8	-10	-12	-16	-20	-24
Code Letter	G	H	J	K	M	N	P
Max Operating Pres. (psig)	1000	1000	1000	1000	750	500	250

TABLE I

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2.4 End Fitting Style Code:

Use this table to specify the fitting style and fitting material of each metal end fitting.

Fitting Code	Fitting Spec. No. or Part No.	Fitting Style	Fitting Material
A	M83798/1	I (37° Flared)	Aluminum
B	M83798/2	II (37° Flared)	Aluminum
C	M83798/3	III (37° Flared)	Aluminum
D	816-	I (37° Flared)	Steel
E	8846-	II (37° Flared)	Steel
F	91-	III (37° Flared)	Steel
G	M83798/4	I (Flareless)	Aluminum
H	M83798/5	II (Flareless)	Aluminum
J	M83798/6	III (Flareless)	Aluminum
K	826-	I (Flareless)	Steel
L	880112-	II (Flareless)	Steel
M	880114-	III (Flareless)	Steel
N	M83798/7	Straight Flange	Aluminum
P	M83798/8	45° Flange	Aluminum
Q	M83798/9	90° Flange	Aluminum
R	8844-	Straight Flange	Steel
S	8845-	45° Flange	Steel
T	8890-	90° Flange	Steel

TABLE II

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## 3 NOTES

1. Hose assemblies defined by this specification are intended to conform to MIL-H-83796 (medium pressure synthetic rubber). Firesleeve or abrasion shield, if required, shall be as defined in Note 10 or 11, respectively.
2. These hose assemblies are intended for use with MIL-T-5624 fuel and MIL-L-23699 lubricating oil with a fluid temperature operating range of -65°F to +300°F. The normal ambient air temperature operating range shall be -65°F to +250°F (without firesleevings). See Table I for normal maximum operating pressures. See vendor data for acceptable deviations from these specifications.



3 37° flared end fittings shall mate with an MS33656 fitting design. Threads shall conform to MIL-S-8879. End fittings shall meet the requirements of MIL-F-83798. Flareless fittings shall mate with MS33514 type connectors. Swivel flanged end fittings shall mate with an MS33786 fitting installation.



4 Fractional length hoses shall be specified in the following increments only:

- a. Under 30 inches long = 1/8 inch increments only
- b. 30 inches long and over = 1/4 inch increments only

5. Hose assemblies shall be fabricated in accordance with Era Process Specification PS4021, Type I. Hose assemblies shall be certifiable to TSO-C53a, Type A (250°F maximum temperature without firesleeve) or TSO-C53a, Type C (300°F maximum temperature with firesleeve), whichever is applicable. **NOTE:** TSO-C53a certification is not required by this specification.



6 All -6, -8, -10, -12, -20 and -24 size hose fittings shall be made of aluminum to meet the requirements of FAR 29.952(c) unless the installation design dictates otherwise. This decision shall be made by the design engineer at the time the hose assembly part number is created. Flanged fittings are only available in -8 through -32 sizes.

**NOTE:** Use of a -10 size 45° elbow and -16 size straight fitting is not approved at this time.

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7. Identify each hose assembly per PS4021, Section 6.



8 Two parts are required for each hose assembly.



9 Angular orientation between the elbows is expressed in three digits. The angle is measured in degrees counterclockwise from centerline of the nearest fitting when positioned at 6 o'clock to the centerline of the other fitting as shown in the figure. If the desired orientation is zero degrees, specify "000".



10 The firesleeve shall be capable of withstanding a continuous ambient operating temperature of 450°F. The firesleeve shall be a silicone fiberglass sleeve or may be an extruded silicone integral type, both capable of meeting TSO C53a, Type C "fire resistant" requirements.



11 If specified, this hose assembly shall have an integral braided polyester cover over the wire braided hose. The purpose of this cover is to provide abrasion resistance protection to the hose assembly.



12 This is the vendor's part number of a specific component of the hose assembly. A letter shall be placed at the end of the part number to designate the size. Refer to Table I on Page 3 to determine the correct code letter for each size.

13. Do not mix different hose vendor component parts in the same hose assembly.

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#### 4 APPROVED PROCUREMENT SOURCES

Hose assemblies and component parts may be purchased only from the following Era Aviation engineering approved sources or their agents. Do not substitute any other vendor parts or mix two different vendor parts in the same hose assembly.

COMPARTMENT PART	APPROVED VENDORS & CORRESPONDING PART NUMBERS		
	Aeroquip Corp. Jackson, MI	12	
Hose W/O Sleeve, or	601- _____ or AE701- _____		
Hose with Integral Abrasion Cover, or	AE501 _____		
Hose with Integral Extruded Firesleeve	AE401 _____		
End Fittings	See Table II		
Socket	516- _____		
Abrasion Sleeve	AE138- _____		
Firesleeve	AE102/624		